CLAIMS

1. (Previously Presented) A method for conducting physical address discovery, facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving by a target host, an address discovery request initiated by a source host seeking a physical address of the target host, wherein the source host and the target host are both hosts within the same cluster; and

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises:

a response source physical address field specifying a non-cluster mode physical address of the target host.

2. (Previously Presented) The method of claim 1 wherein the address discovery request is an address resolution protocol (ARP) request.

3. (Original) The method of claim 1 wherein the non-cluster mode physical address of the target host is a dedicated address of the target host.

4. (Original) The method of claim 3 wherein the dedicated address is derived from an IP address assigned to the target host.

5. (Original) The method of claim 1 wherein the non-cluster mode physical address of the target host is a shared address assigned to multiple hosts within the cluster.

6. (Previously Presented) The method of claim 1 wherein the generating comprises:

determining by the target host whether the address discovery request was issued by a source host operating in the cluster mode.

7. (Previously Presented) The method of claim 6 wherein the target host is distinct from the source host.

8. (Previously Presented) The method of claim 7 wherein the determining comprises detecting that the address discovery request includes:

a request source physical address field specifying the shared cluster address assigned to the cluster; and

a request source network communication protocol-specific address field identifying the source host as a host within the cluster.

9. (Previously Presented) The method of claim 8 wherein the shared cluster address is a media access control (MAC) address.

10. (Original) The method of claim 9 wherein the source network communication protocol-specific address field contains an IP address.

11. (Previously Presented) The method of claim 8 further comprising:

maintaining, by the target host, a list of network communication protocol-specific addresses corresponding to hosts within the cluster.

12. (Previously Presented) The method of claim 8 further comprising:

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the shared cluster address with a non-cluster mode physical address of the source host.

13. (Previously Presented) The method of claim 12 wherein the non-cluster mode physical address is a dedicated media access control (MAC) address.

14. (Previously Presented) The method of claim 12 wherein the target host comprises a network communication protocol-specific layer including an address discovery request handler that operates in the cluster mode and wherein the method further comprises passing, after the replacing step, the address discovery request to the address discovery request handler, and wherein the generating step further comprises:

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field, and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field.

15. (Previously Presented) The method of claim 14 wherein the second creating step is performed by the target host.

16. (Previously Presented) The method of claim 14 wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, the method further comprising:

storing, by the address discovery request handler within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

17. (Original) The method of claim 14 wherein the network communication protocol-specific layer implements the TCP/IP protocol.

18. (Previously Presented) The method of claim 14 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster, the method further comprising rendering the address discovery response acceptable by the source host operating in the cluster mode by:

replacing, within the response destination field, the non-cluster mode physical address with the shared cluster address.

19. (Original) The method of claim 1 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster.

20. (Currently Amended) A ~~computer-readable~~ computer storage medium comprising computer-executable instructions for conducting physical address discovery, facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the computer-executable instructions facilitating performing a method comprising:

receiving by a target host within the cluster, an address discovery request, initiated by a source host within the cluster, seeking a physical address of the target host; and

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises:

a response source physical address field specifying a non-cluster mode physical address of the target host.

21. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 20 wherein the address discovery request is an address resolution protocol (ARP) request.

22. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 20 wherein the non-cluster mode physical address of the target host is a dedicated address of the target host.

23. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 22 wherein the dedicated address is derived from an IP address assigned to the target host.

24. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 20 wherein the non-cluster mode physical address of the target host is a shared address assigned to multiple hosts within the cluster.

25. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 20 wherein the generating comprises:

determining by the target host whether the address discovery request was issued by a source host operating in the cluster mode.

26. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 25 wherein the target host is distinct from the source host.

27. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 26 wherein the determining comprises detecting that the address discovery request includes:

a request source physical address field specifying the shared cluster address assigned to the cluster; and

a request source network communication protocol-specific address field identifying the source host as a host within the cluster.

28. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 27 wherein the shared cluster address is a media access control (MAC) address.

29. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 28 wherein the source network communication protocol-specific address field contains an IP address.

30. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 27, the method further comprising:

maintaining, by the target host, a list of network communication protocol-specific addresses corresponding to hosts within the cluster.

31. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 27, the method further comprising:

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the shared cluster address with a non-cluster mode physical address of the source host.

32. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 31 wherein the non-cluster mode physical address is a dedicated media access control (MAC) address.

33. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 31 ~~wherein~~ wherein:

the target host comprises a network communication protocol-specific layer including an address discovery request handler that operates in the cluster ~~mode and wherein~~ mode;

the method further comprises passing, after the replacing step, the address discovery request to the address discovery request ~~handler, and wherein~~ handler; and

the generating further comprises:

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field, and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field.

34. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 33 wherein the second creating step is performed by the target host.

35. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 33 wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, the method further comprising:

storing, by the address discovery request handler within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

36. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 33 wherein the network communication protocol-specific layer implements the TCP/IP protocol.

37. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 33 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster, the method further comprising:

rendering the address discovery response acceptable by the source host operating in the cluster mode by replacing, within the response destination field, the non-cluster mode physical address with the shared cluster address.

38. (Currently Amended) The ~~computer-readable~~ computer storage medium of claim 20 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster.

39. (Previously Presented) A host computer system including physical address discovery components facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the host computer system comprising:

a network interface for receiving an address discovery request initiated by a source host within the cluster, seeking a physical address of a target host within the cluster;

a transport layer component for carrying out transport-protocol specific processing of network requests; and

intracluster address discovery logic interposed between the network interface and the transport layer component of the host computer system, the intracluster address discovery logic performing the step of:

generating an address discovery response acceptable by the source host operating in the cluster mode and including:

a response source physical address field specifying a non-cluster mode physical address of the target host,

wherein the host computer system is one of the hosts of the cluster operating in the cluster mode.

40. (Previously Presented) The host computer system of claim 39 wherein the address discovery request is an address resolution protocol (ARP) request.

41. (Previously Presented) The host computer system of claim 39 wherein the non-cluster mode physical address of the target host is a dedicated address of the target host.

42. (Previously Presented) The host computer system of claim 41 wherein the dedicated address is derived from an IP address assigned to the target host.

43. (Previously Presented) The host computer system of claim 39 wherein the generating step is executed in accordance with a further step of:

determining whether the address discovery request was issued by a source host operating in the cluster mode.

44. (Previously Presented) The host computer system of claim 43 wherein the determining step performed by the intracluster address discovery logic comprises detecting that the address discovery request includes:

a request source physical address field specifying the shared cluster address assigned to the cluster; and

a request source network communication protocol-specific address field identifying a host within the cluster of hosts.

45. (Previously Presented) The host computer system of claim 44 wherein the shared cluster address is a media access control (MAC) address.

46. (Previously Presented) The host computer system of claim 45 wherein the source network communication protocol-specific address field contains an IP address.

47. (Previously Presented) The host computer system of claim 44 further comprising a list of network communication protocol-specific addresses corresponding to hosts within the cluster.

48. (Previously Presented) The host computer system of claim 44 wherein the intracluster address discovery logic comprises executable instructions for:

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the shared cluster address with a non-cluster mode physical address of the source host.

49. (Previously Presented) The host computer system of claim 48 wherein the non-cluster mode physical address is a dedicated media access control (MAC) address.

50. (Previously Presented) The host computer system of claim 48 wherein the transport layer component includes an address discovery request handler that operates in the cluster mode and wherein the method further comprises passing, after the replacing step, the address discovery request to the address discovery request handler, and wherein the generating step performed by the intracluster address discovery logic comprises the further steps of:

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field, and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field.

51. (Previously Presented) The host computer system of claim 50, wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, and wherein the address discovery request handler stores, within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

52. (Previously Presented) The host computer system of claim 50 wherein the transport layer component implements the TCP/IP protocol.

53. (Previously Presented) The host computer system of claim 44 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster.

54. (Previously Presented) A method for processing point-to-point communications between hosts of a cluster operating in a cluster mode implemented by a network communication protocol-specific layer of each host, and wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving an intracluster message issued by an initiating host of the cluster, the intracluster message including within a message destination field, a non-cluster mode physical address of a target host of the cluster;

the target host replacing, within the intracluster message, the non-cluster mode physical address with the shared cluster address; and

presenting, after the replacing, the intracluster message to the network communication protocol-specific layer.

55. (Previously Presented) The method of claim 54 wherein the replacing is performed by a network load balancing component.

56. (Original) The method of claim 54 wherein the network communication protocol-specific layer implements TCP/IP.

57. (Previously Presented) The method of claim 54 further comprising:

generating an intracluster response message including a non-cluster mode physical address for the initiating host within the message destination field.

58. (Previously Presented) The method of claim 57 further comprising:

receiving, by the initiating host, the intracluster response message including the non-cluster mode physical address for the initiating host within the message destination field;

replacing, within the intracluster response message by the initiating host, the non-cluster mode physical address with the shared cluster address; and

presenting, after the replacing step, the intracluster message to the network communication protocol-specific layer within the initiating host.

59. (Currently Amended) A method for performing point-to-point communications between hosts of a cluster operating in a cluster mode, wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving by a target host within the cluster, an address discovery request seeking a physical address of the target host;

determining by the target host, that the address discovery request was issued by a source host within the cluster, operating in the cluster mode;

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, the address ~~discover~~ discovery response including:

a response source physical address field specifying a non-cluster mode physical address of the target host;

receiving by the target host, an intracluster message issued by the source host, the intracluster message including a non-cluster mode physical address of the target host within a message destination field;

replacing, within the intracluster message by the target host, the non-cluster mode physical address with the shared cluster address; and

presenting, after the replacing step, the intracluster message to a network communication protocol-specific layer of the target host.